In re Appln. of BAHL et al.
Application No. 09/513,155
Reply to Office action of May 21, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 – 10. Canceled

11. (Currently Amended) ~~The~~ A method ~~of claim 5~~ for determining a location of a mobile unit,

comprising: measuring a wireless signal strength; comparing the measured wireless signal strength

to a table of mathematically estimated wireless signal strengths and corresponding mobile unit

locations; finding a table entry whose mathematically estimated wireless signal strength is closest,

by distance in signal space, to the measured wireless signal strength; and determining the location of

the mobile unit with reference to the found table entry; wherein the mathematical estimates of base

station wireless signal strengths at the corresponding mobile unit locations are derived by

performing steps comprising: determining an existing number of walls between the base station and

the corresponding mobile unit locations; and determining a wall attenuation factor.

12. (Previously Presented) The method of claim 11 wherein the determining the existing number of

walls includes using a line clipping algorithm.

13. (Previously Presented) The method of claim 11 wherein the determining the existing number of

walls includes determining a practical limit number of walls between the base station and the

corresponding mobile unit locations.

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14 – 19. Canceled

20. (Currently Amended) ~~The~~ A method ~~of claim 14~~ for determining a location of a mobile unit, comprising: measuring at a base station, a wireless signal strength of the mobile unit; comparing the measured wireless signal strength to a table of mathematically estimated wireless signal strengths and corresponding mobile unit locations that includes, for mobile units at the corresponding mobile unit locations, mathematical estimates of mobile unit wireless signal strengths at one or more base stations; finding a table entry whose mathematically estimated wireless signal strength is closest, by distance in signal space, to the measured wireless signal strength; and determining the location of the mobile unit with reference to the found table entry; wherein the mathematical estimates of mobile unit wireless signal strengths at the one or more base stations locations are derived by performing steps comprising: determining an existing number of walls between the one or more base stations and the corresponding mobile unit locations; and determining a wall attenuation factor.

21. (Previously Presented) The method of claim 20 wherein the determining the existing number of walls includes using a line clipping algorithm.

22. (Previously Presented) The method of claim 20 wherein the determining the existing number of walls includes determining a practical limit number of walls between the one or more base stations and the corresponding mobile unit locations.

23 – 32. Canceled

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33. (Currently Amended) ~~The~~ A computer-readable medium ~~of claim 27~~ having computer-executable instructions for performing steps, comprising: measuring, at a mobile unit, a wireless signal strength of a base station; comparing the measured wireless signal strength to a table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, including mathematical estimates of base station wireless signal strengths at the corresponding mobile unit locations; finding a table entry whose mathematically estimated wireless signal strength is closest, by distance in signal space, to the measured wireless signal strength; and determining the location of the mobile unit with reference to the found table entry; wherein the mathematical estimates of base station wireless signal strengths at the corresponding mobile unit locations are derived by performing steps comprising: determining an existing number of walls between the base station and the corresponding mobile unit locations; and determining a wall attenuation factor.

34. (Previously Presented) The computer-readable medium of claim 33 wherein the determining the existing number of walls includes using a line clipping algorithm.

35. (Previously Presented) The computer-readable medium of claim 33 wherein the determining the existing number of walls includes determining a practical limit number of walls between the base station and the corresponding mobile unit locations.

36 – 41. Canceled

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42. (Currently Amended) ~~The~~ A computer-readable medium ~~of claim 36~~ having computer-executable instructions for performing steps, comprising: measuring, at a base station, a wireless signal strength of a mobile unit; comparing the measured wireless signal strength to a table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, including, for mobile units at the corresponding mobile unit locations, mathematical estimates of mobile unit wireless signal strengths at one or more base stations; finding a table entry whose mathematically estimated wireless signal strength is closest, by distance in signal space, to the measured wireless signal strength; and determining the location of the mobile unit with reference to the found table entry; wherein the mathematical estimates of mobile unit wireless signal strengths at the one or more base stations locations are derived by performing steps comprising: determining an existing number of walls between the one or more base stations and the corresponding mobile unit locations; and determining a wall attenuation factor.

43. (Previously Presented) The computer-readable medium of claim 42 wherein the determining the existing number of walls includes using a line clipping algorithm.

44. (Previously Presented) The computer-readable medium of claim 42 wherein the determining the existing number of walls includes determining a practical limit number of walls between the one or more base stations and the corresponding mobile unit locations.

45 – 49. Canceled

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50. (Currently Amended) ~~The~~ A mobile unit ~~of claim 49~~ comprising: a wireless interface hardware, wherein the wireless interface hardware obtains a wireless signal strength of a base station measured at the mobile unit; a memory storage, storing a table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, including mathematical estimates of base station wireless signal strengths at the corresponding mobile unit locations; and a central processing unit, wherein the central processing unit compares the obtained wireless signal strength to the table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, finds a table entry whose mathematically estimated wireless signal strength is closest, by distance in signal space, to the obtained wireless signal strength, and determines the location of the mobile unit with reference to the found table entry; wherein further the mathematical estimates of base station wireless signal strengths at the corresponding mobile unit locations are derived by performing steps comprising: determining an existing number of walls between the base station and the corresponding mobile unit locations; and determining a wall attenuation factor.

51. (Previously Presented) The mobile unit of claim 50 wherein the determining the existing number of walls includes using a line clipping algorithm.

52. (Previously Presented) The mobile unit of claim 51 wherein the determining the existing number of walls includes determining a practical limit number of walls between the base station and the corresponding mobile unit locations.

53. Canceled

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54. (Currently Amended) ~~The~~ A mobile unit ~~of claim 53~~ comprising: a wireless interface hardware, wherein the wireless interface hardware requests, from a base station, a wireless signal strength of the mobile unit measured at the base station; a memory storage, storing a table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, including, for mobile units at the corresponding mobile unit locations, mathematical estimates of mobile unit wireless signal strengths at one or more base stations; and a central processing unit, wherein the central processing unit compares the obtained wireless signal strength to the table of mathematically estimated wireless signal strengths and corresponding mobile unit locations, finds a table entry whose mathematically estimated wireless signal strength is closest, by distance in signal space, to the obtained wireless signal strength, and determines the location of the mobile unit with reference to the found table entry; wherein further the mathematical estimates of mobile unit wireless signal strengths at the one or more base stations locations are derived by performing steps comprising: determining an existing number of walls between the one or more base stations and the corresponding mobile unit locations; and determining a wall attenuation factor.

55. (Previously Presented) The mobile unit of claim 54 wherein the determining the existing number of walls includes using a line clipping algorithm.

56. (Previously Presented) The mobile unit of claim 54 wherein the determining the existing number of walls includes determining a practical limit number of walls between the one or more base stations and the corresponding mobile unit locations.